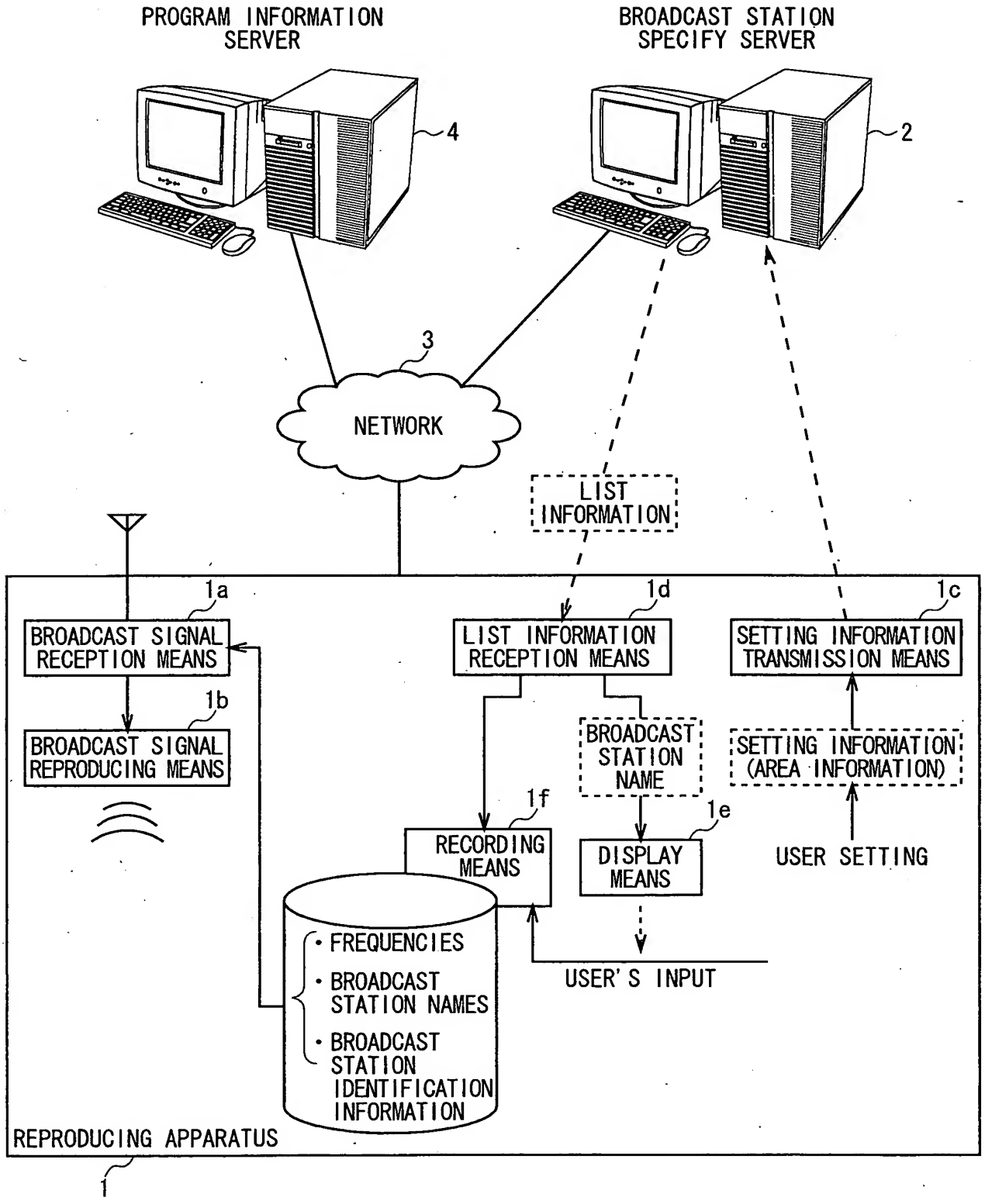
PROGRAM INFORMATION SERVER
BROADCAST STATION SPECIFY SERVER
4
2
3
NETWORK
LIST INFORMATION
1a
BROADCAST SIGNAL RECEPTION MEANS
1b
BROADCAST SIGNAL REPRODUCING MEANS
1d
LIST INFORMATION RECEPTION MEANS
1c
SETTING INFORMATION TRANSMISSION MEANS
BROADCAST STATION NAME
SETTING INFORMATION (AREA INFORMATION)
1f
RECORDING MEANS
1e
DISPLAY MEANS
USER SETTING
• FREQUENCIES
• BROADCAST STATION NAMES
• BROADCAST STATION IDENTIFICATION INFORMATION
USER'S INPUT
REPRODUCING APPARATUS
1

FIG. 1

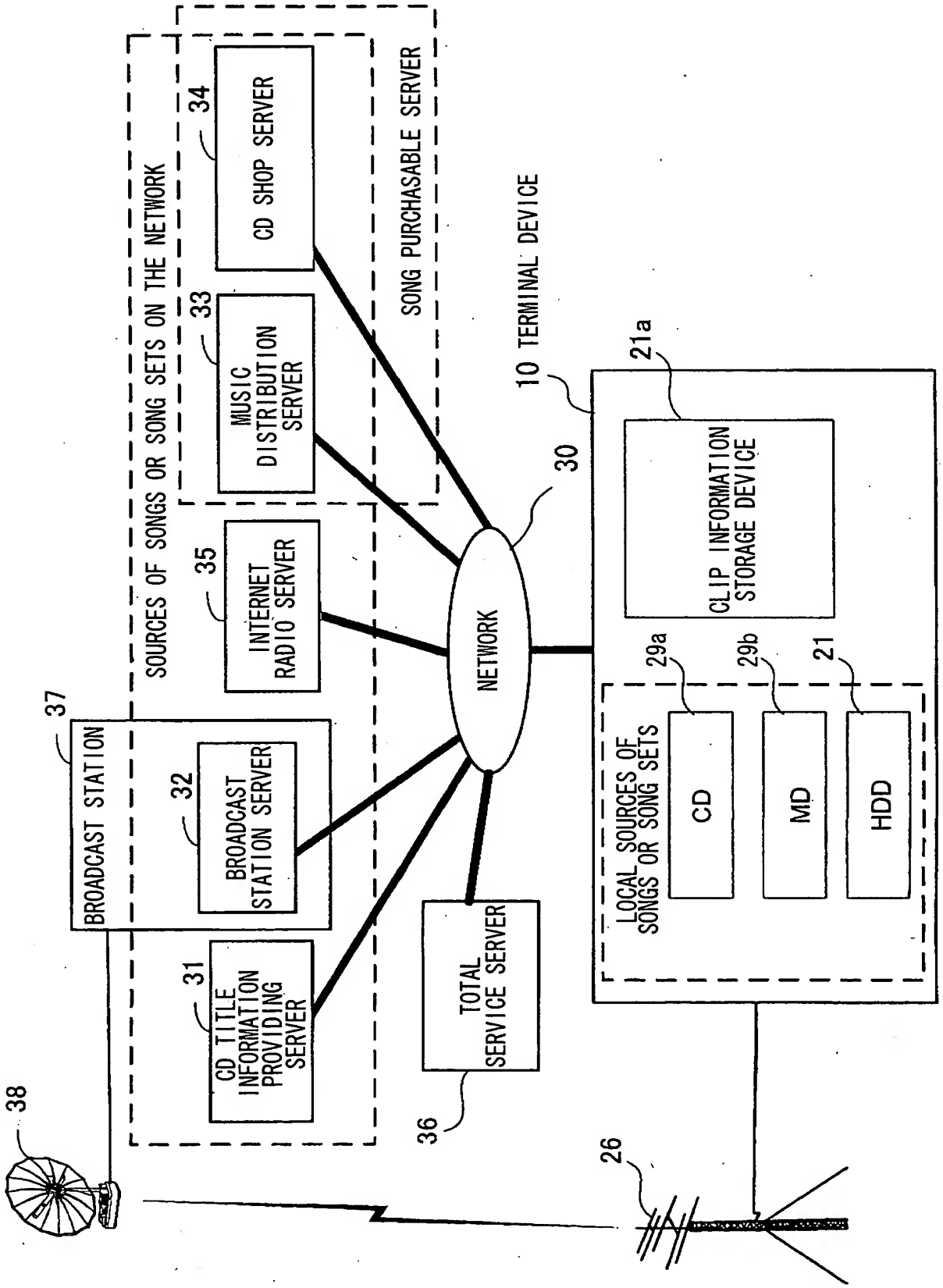
SOURCES OF SONGS OR SONG SETS ON THE NETWORK
SONG PURCHASABLE SERVER
34
CD SHOP SERVER
33
MUSIC DISTRIBUTION SERVER
35
INTERNET RADIO SERVER
37
BROADCAST STATION
32
BROADCAST STATION SERVER
31
CD TITLE INFORMATION PROVIDING SERVER
36
TOTAL SERVICE SERVER
38
NETWORK
30
10 TERMINAL DEVICE
21a
CLIP INFORMATION STORAGE DEVICE
29a
29b
21
LOCAL SOURCES OF SONGS OR SONG SETS
CD
MD
HDD
26

FIG. 2

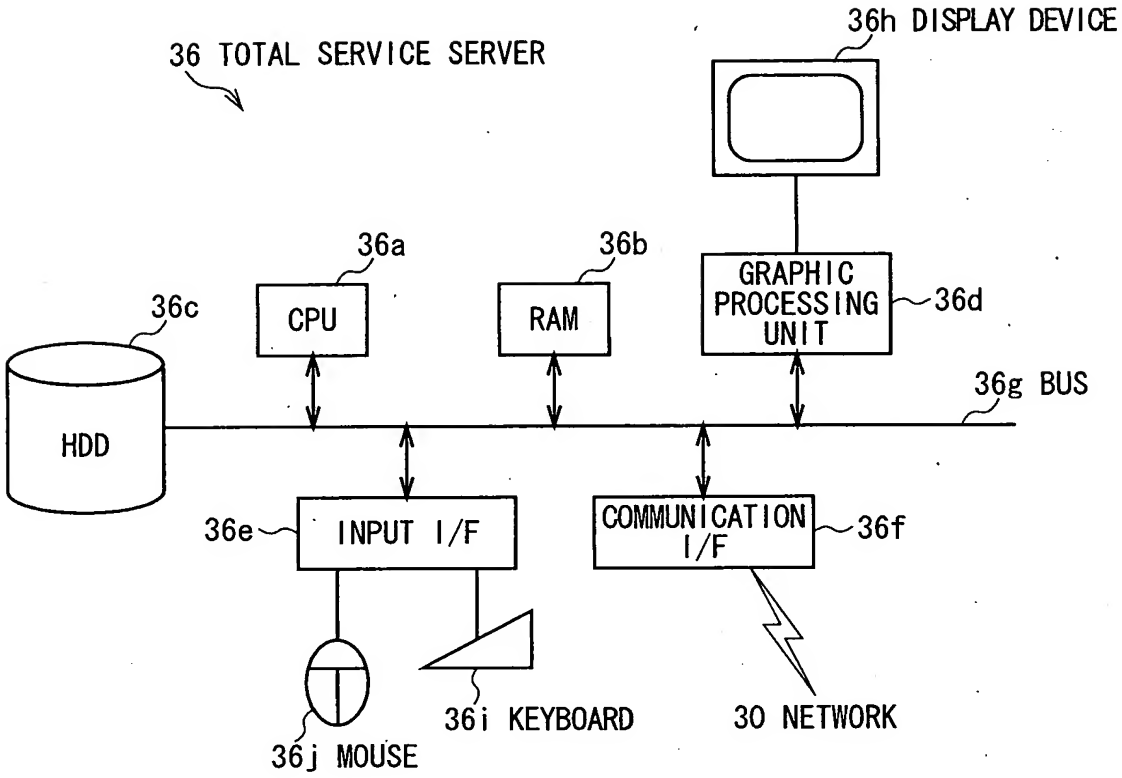
36 TOTAL SERVICE SERVER
36h DISPLAY DEVICE
36a
36b
36c
CPU
RAM
GRAPHIC PROCESSING UNIT
36d
36g BUS
HDD
36e
INPUT I/F
COMMUNICATION I/F
36f
36j MOUSE
36i KEYBOARD
30 NETWORK

FIG. 3

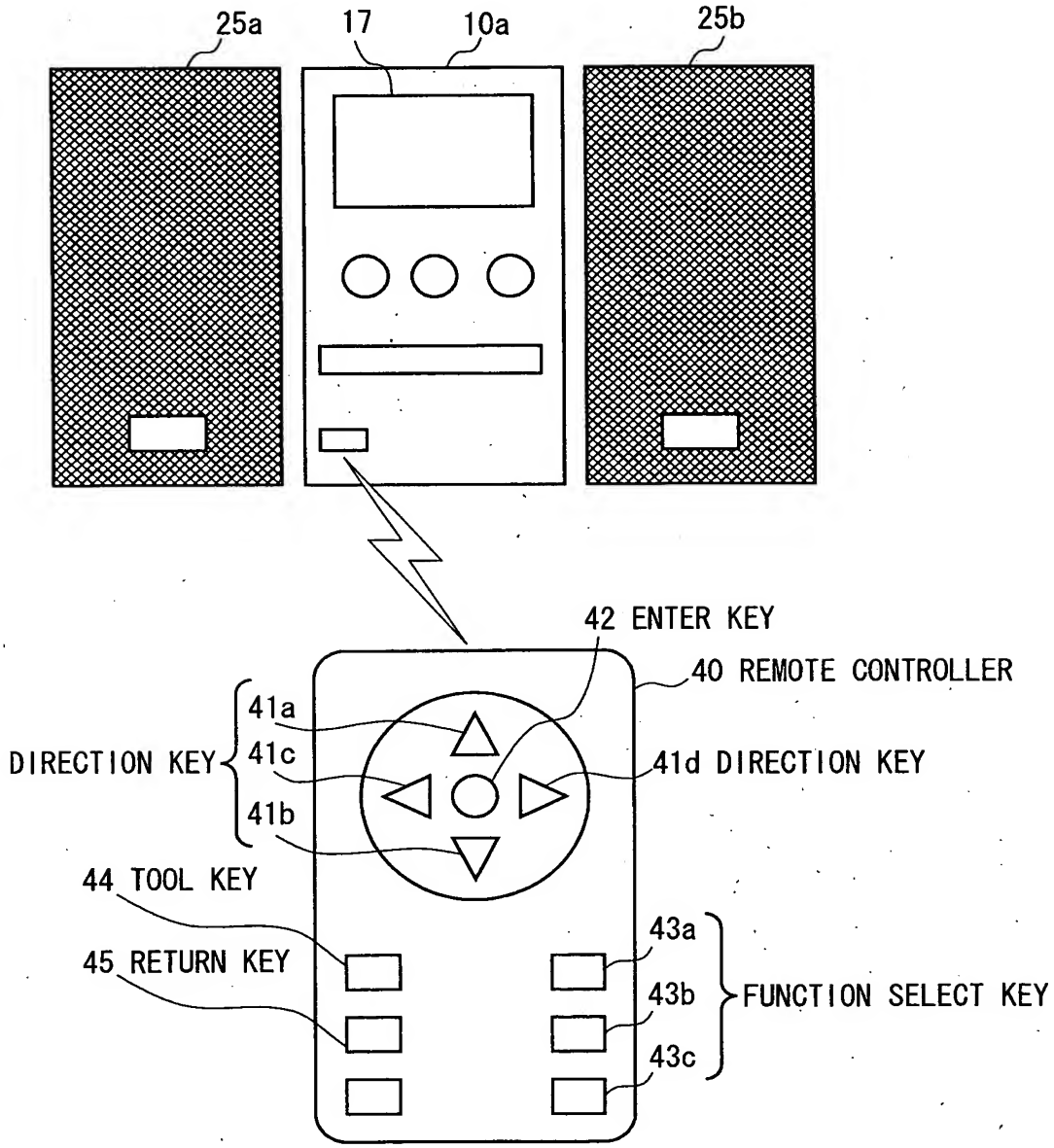
25a
17
10a
25b
42 ENTER KEY
40 REMOTE CONTROLLER
41a
DIRECTION KEY
41c
41b
41d DIRECTION KEY
44 TOOL KEY
45 RETURN KEY
43a
43b
43c
FUNCTION SELECT KEY

FIG. 4

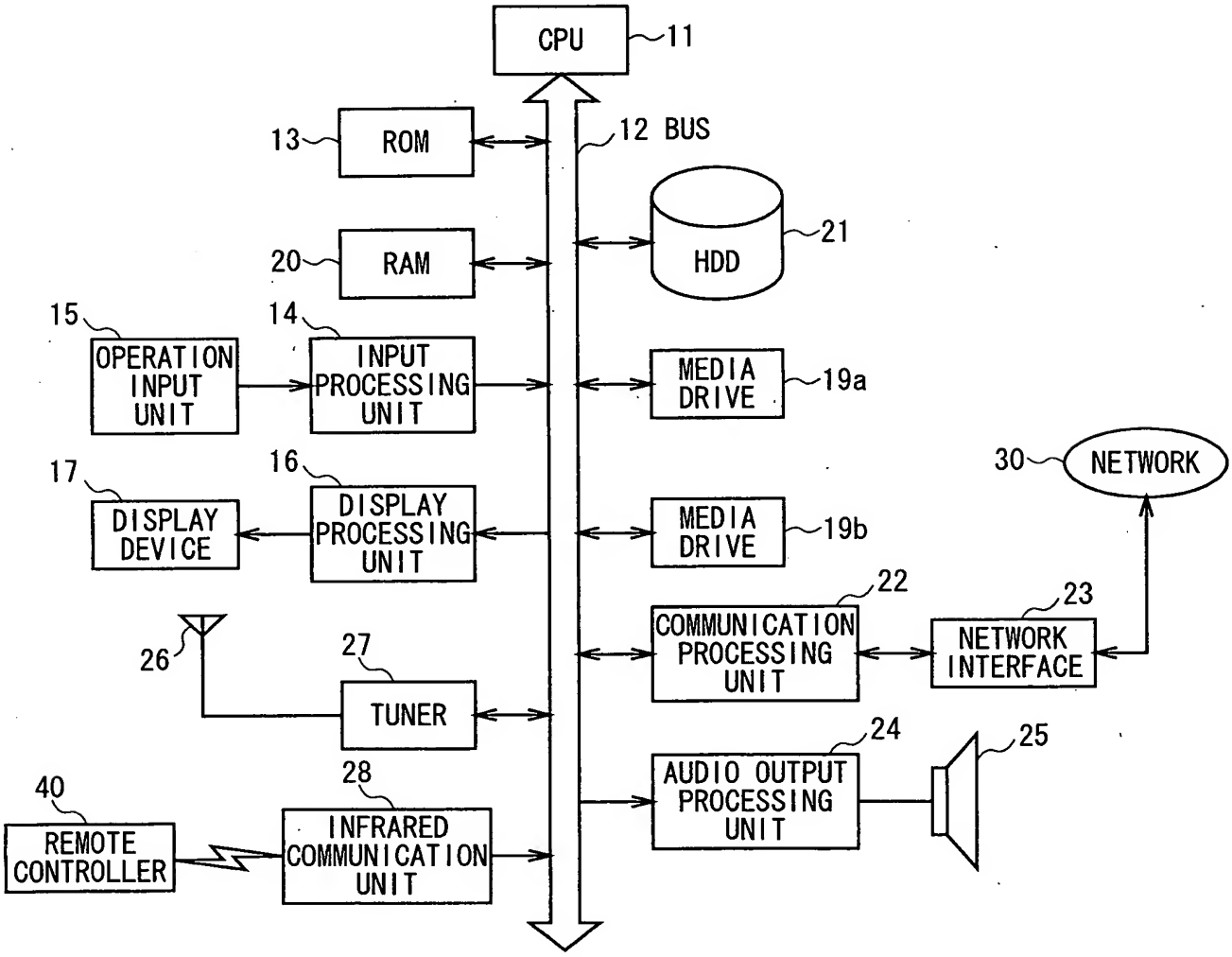
CPU
11
13
ROM
12 BUS
HDD
21
20
RAM
15
14
OPERATION INPUT UNIT
INPUT PROCESSING UNIT
MEDIA DRIVE
19a
30
NETWORK
17
16
DISPLAY DEVICE
DISPLAY PROCESSING UNIT
MEDIA DRIVE
19b
22
23
COMMUNICATION PROCESSING UNIT
NETWORK INTERFACE
26
27
TUNER
24
25
AUDIO OUTPUT PROCESSING UNIT
40
28
REMOTE CONTROLLER
INFRARED COMMUNICATION UNIT

FIG. 5

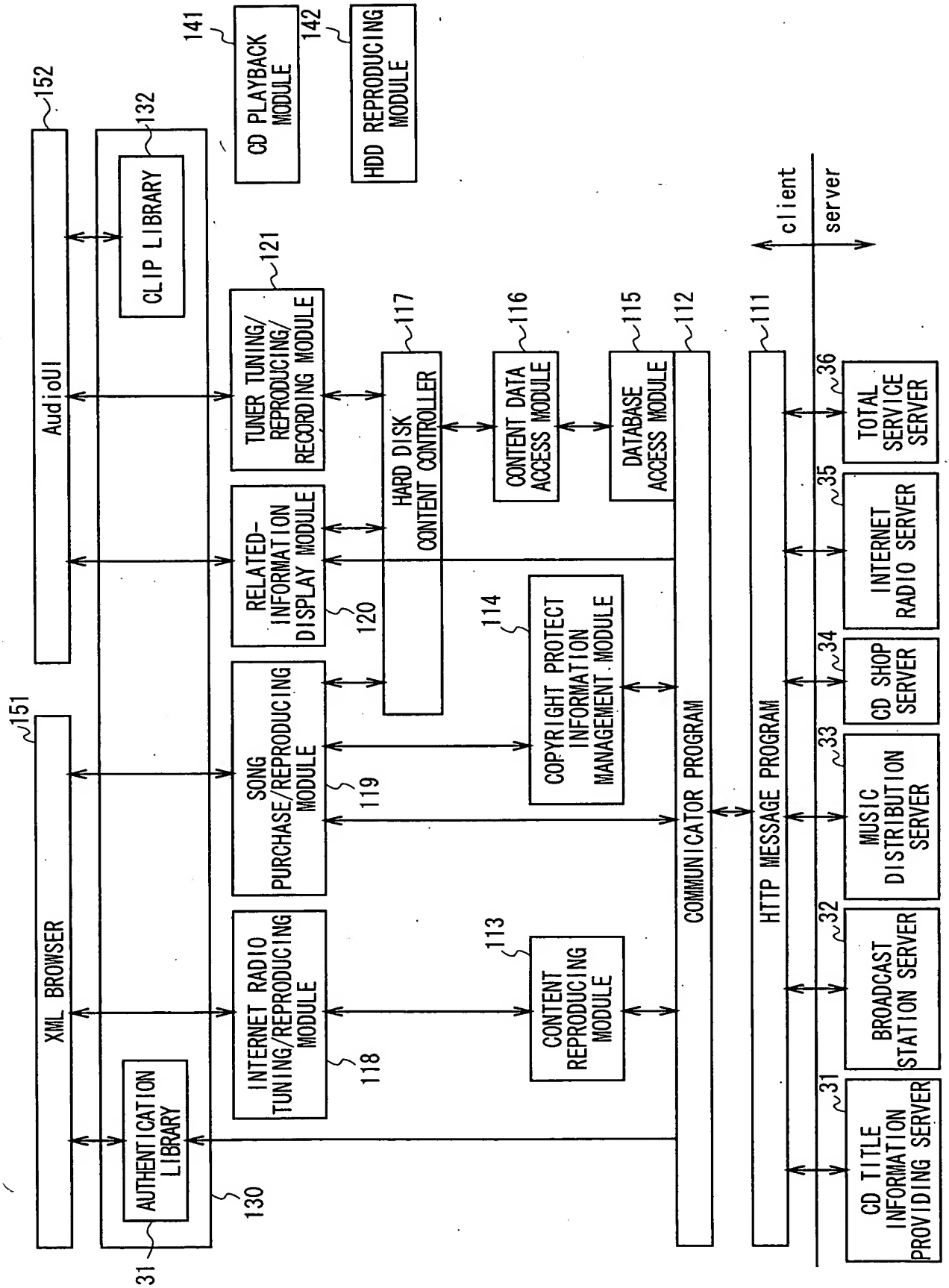
client
server
AudioUI
XML BROWSER
AUTHENTICATION LIBRARY
CLIP LIBRARY
CD PLAYBACK MODULE
HDD REPRODUCING MODULE
TUNER TUNING/ REPRODUCING/ RECORDING MODULE
RELATED-INFORMATION DISPLAY MODULE
SONG PURCHASE/REPRODUCING MODULE
INTERNET RADIO TUNING/REPRODUCING MODULE
CONTENT REPRODUCING MODULE
HARD DISK CONTENT CONTROLLER
COPYRIGHT PROTECT INFORMATION MANAGEMENT MODULE
CONTENT DATA ACCESS MODULE
DATABASE ACCESS MODULE
COMMUNICATOR PROGRAM
HTTP MESSAGE PROGRAM
CD TITLE INFORMATION PROVIDING SERVER
BROADCAST STATION SERVER
MUSIC DISTRIBUTION SERVER
CD SHOP SERVER
INTERNET RADIO SERVER
TOTAL SERVICE SERVER
130
131
151
152
132
141
142
121
120
119
118
113
114
117
116
115
112
111
31
32
33
34
35
36

FIG. 6

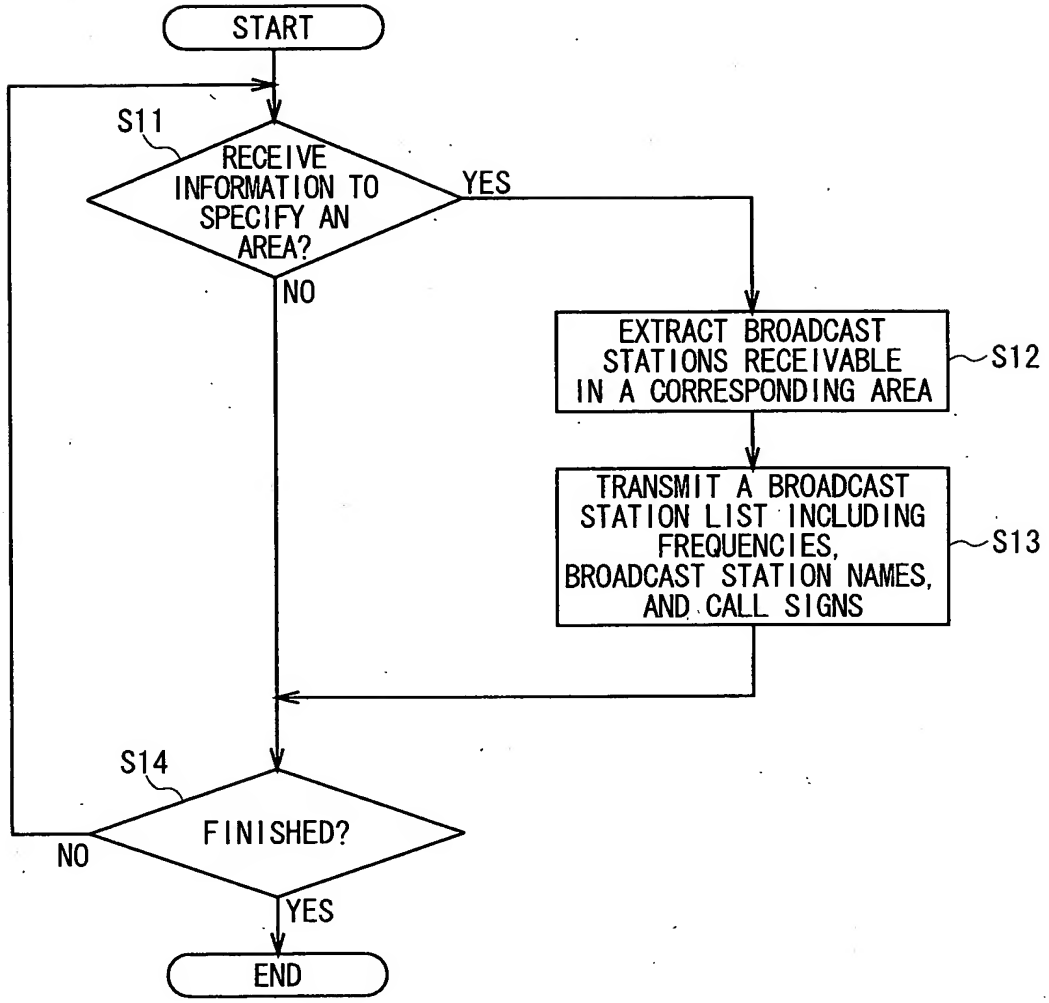
START
S11
RECEIVE INFORMATION TO SPECIFY AN AREA?
YES
NO
EXTRACT BROADCAST STATIONS RECEIVABLE IN A CORRESPONDING AREA
S12
TRANSMIT A BROADCAST STATION LIST INCLUDING FREQUENCIES, BROADCAST STATION NAMES, AND CALL SIGNS
S13
S14
FINISHED?
NO
YES
END

FIG. 7

AREA	RECEIVABLE BROADCAST STATIONS		
	FREQUENCY (MHz)	BROADCAST STATION NAME	CALL SIGN
AREA A	80.0	FM○○	J0**
AREA A	81.3	FM△△	J0**
AREA A	84.7	××FM	J0**
⋮	⋮	⋮	⋮
AREA B	76.7	□□□□FM	J0**
AREA B	84.3	FM○○	J0**
⋮	⋮	⋮	⋮

FIG. 8

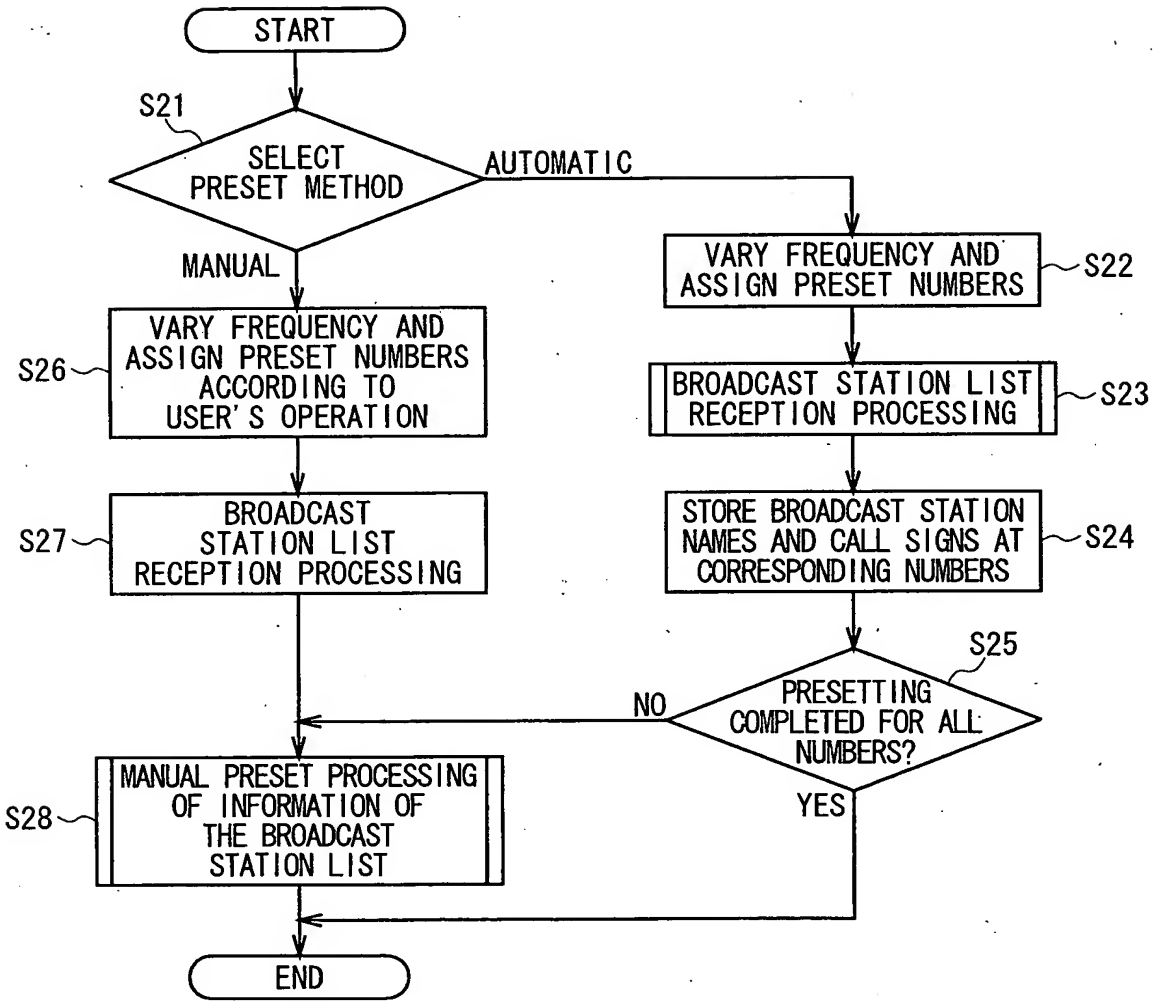
START
S21
SELECT PRESET METHOD
AUTOMATIC
MANUAL
VARY FREQUENCY AND ASSIGN PRESET NUMBERS
S22
BROADCAST STATION LIST RECEPTION PROCESSING
S23
STORE BROADCAST STATION NAMES AND CALL SIGNS AT CORRESPONDING NUMBERS
S24
S25
PRESETTING COMPLETED FOR ALL NUMBERS?
NO
YES
VARY FREQUENCY AND ASSIGN PRESET NUMBERS ACCORDING TO USER'S OPERATION
S26
BROADCAST STATION LIST RECEPTION PROCESSING
S27
MANUAL PRESET PROCESSING OF INFORMATION OF THE BROADCAST STATION LIST
S28
END

FIG. 9

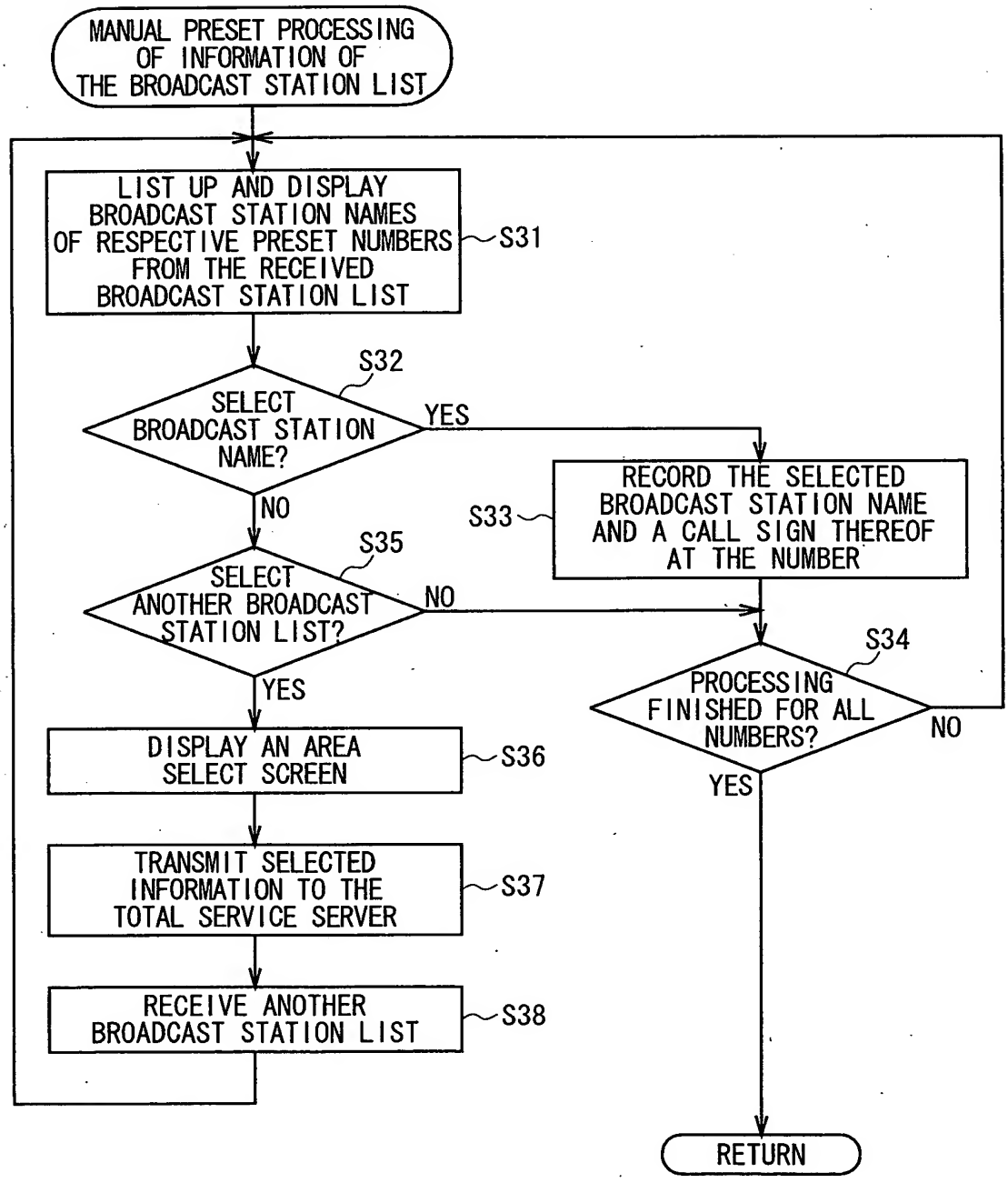
MANUAL PRESET PROCESSING OF INFORMATION OF THE BROADCAST STATION LIST
LIST UP AND DISPLAY BROADCAST STATION NAMES OF RESPECTIVE PRESET NUMBERS FROM THE RECEIVED BROADCAST STATION LIST
S31
S32
SELECT BROADCAST STATION NAME?
YES
NO
RECORD THE SELECTED BROADCAST STATION NAME AND A CALL SIGN THEREOF AT THE NUMBER
S33
S35
SELECT ANOTHER BROADCAST STATION LIST?
NO
YES
S34
PROCESSING FINISHED FOR ALL NUMBERS?
NO
YES
DISPLAY AN AREA SELECT SCREEN
S36
TRANSMIT SELECTED INFORMATION TO THE TOTAL SERVICE SERVER
S37
RECEIVE ANOTHER BROADCAST STATION LIST
S38
RETURN

FIG. 10

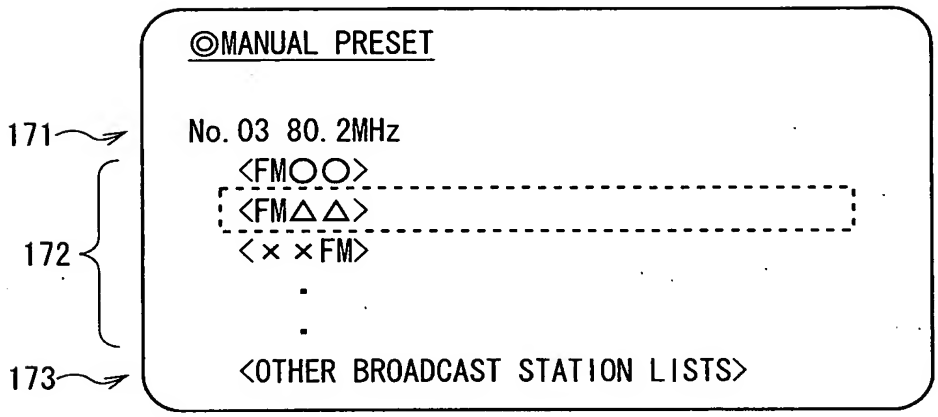
◎MANUAL PRESET
171
No. 03 80. 2MHz
<FM○○>
<FM△△>
172
<××FM>
173
<OTHER BROADCAST STATION LISTS>

FIG. 11

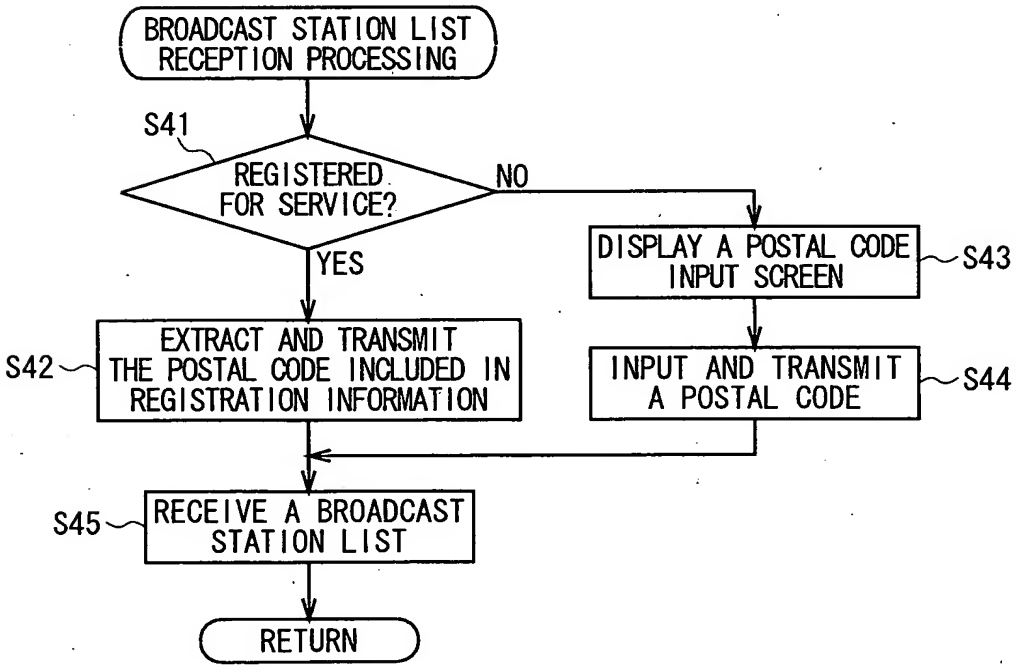
BROADCAST STATION LIST RECEPTION PROCESSING
S41
REGISTERED FOR SERVICE?
NO
YES
DISPLAY A POSTAL CODE INPUT SCREEN
S43
EXTRACT AND TRANSMIT THE POSTAL CODE INCLUDED IN REGISTRATION INFORMATION
S42
INPUT AND TRANSMIT A POSTAL CODE
S44
RECEIVE A BROADCAST STATION LIST
S45
RETURN

FIG. 12

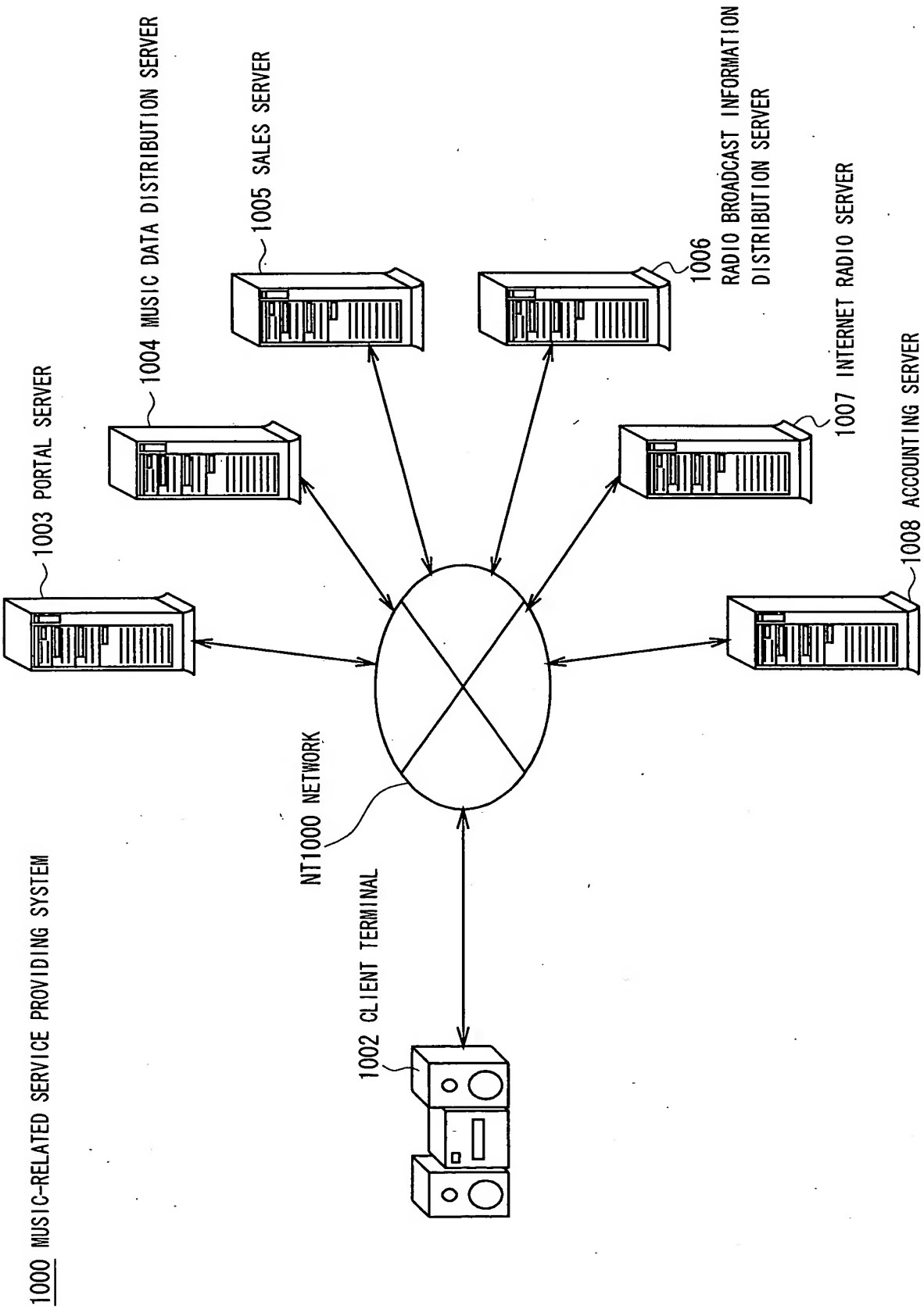
1000 MUSIC-RELATED SERVICE PROVIDING SYSTEM
1002 CLIENT TERMINAL
NT1000 NETWORK
1003 PORTAL SERVER
1004 MUSIC DATA DISTRIBUTION SERVER
1005 SALES SERVER
1006 RADIO BROADCAST INFORMATION DISTRIBUTION SERVER
1007 INTERNET RADIO SERVER
1008 ACCOUNTING SERVER

FIG. 13

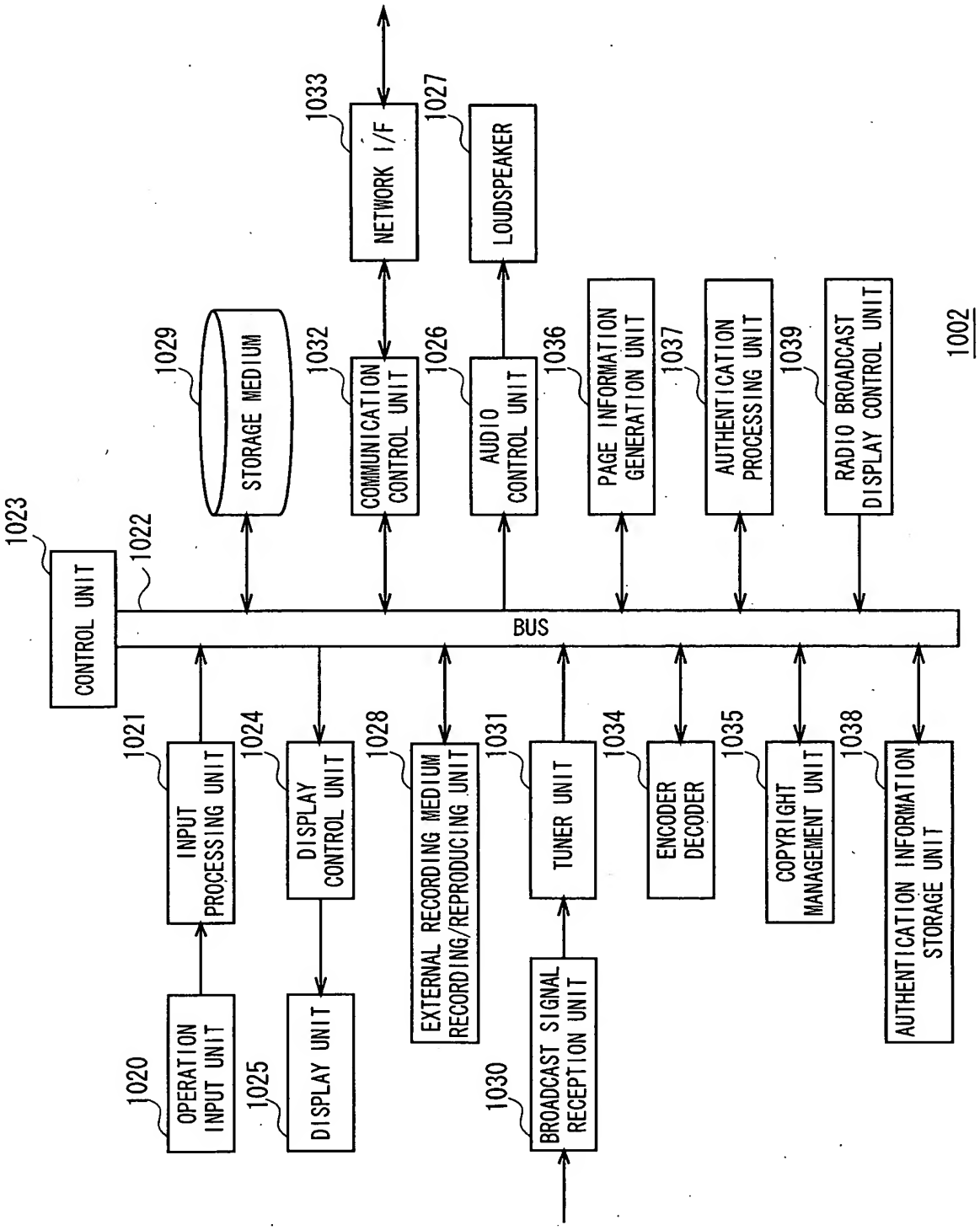
1002
1020
OPERATION INPUT UNIT
1021
INPUT PROCESSING UNIT
1022
1023
CONTROL UNIT
1024
DISPLAY CONTROL UNIT
1025
DISPLAY UNIT
1026
AUDIO CONTROL UNIT
1027
LOUDSPEAKER
1028
EXTERNAL RECORDING MEDIUM RECORDING/REPRODUCING UNIT
1029
STORAGE MEDIUM
1030
BROADCAST SIGNAL RECEPTION UNIT
1031
TUNER UNIT
1032
COMMUNICATION CONTROL UNIT
1033
NETWORK I/F
1034
ENCODER DECODER
1035
COPYRIGHT MANAGEMENT UNIT
1036
PAGE INFORMATION GENERATION UNIT
1037
AUTHENTICATION PROCESSING UNIT
1038
AUTHENTICATION INFORMATION STORAGE UNIT
1039
RADIO BROADCAST DISPLAY CONTROL UNIT
BUS

FIG. 14

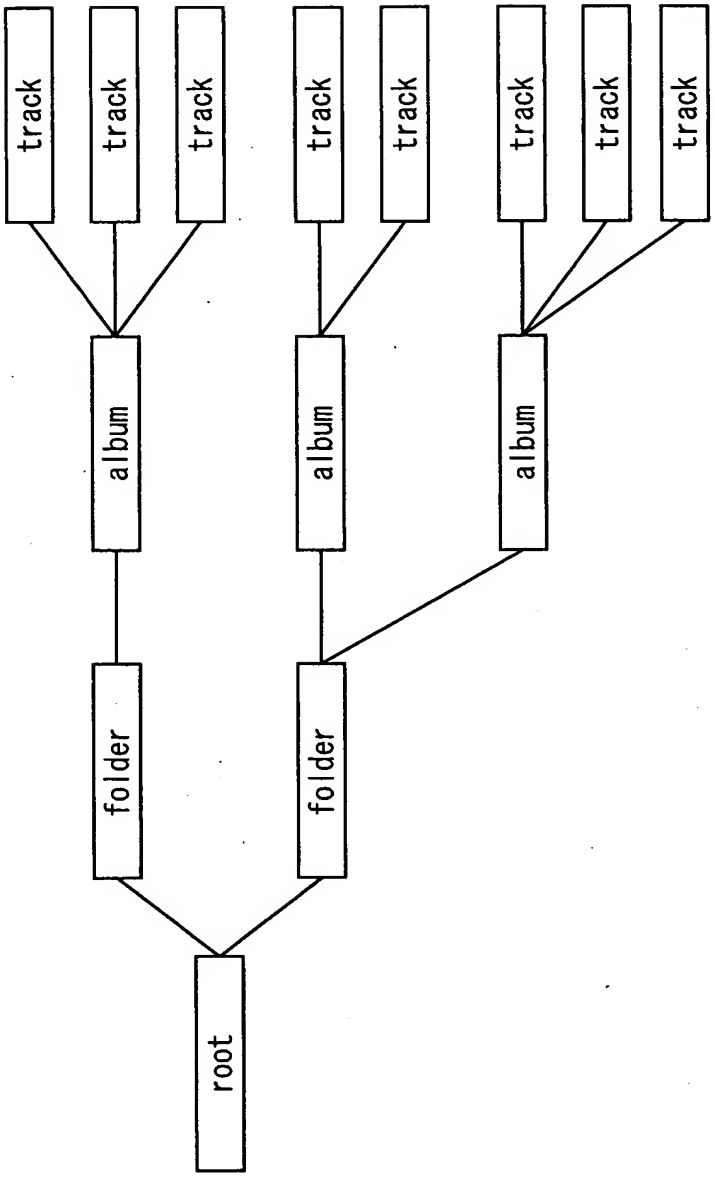
track
track
track
track
track
track
track
track
track
album
album
album
folder
folder
root

FIG. 15

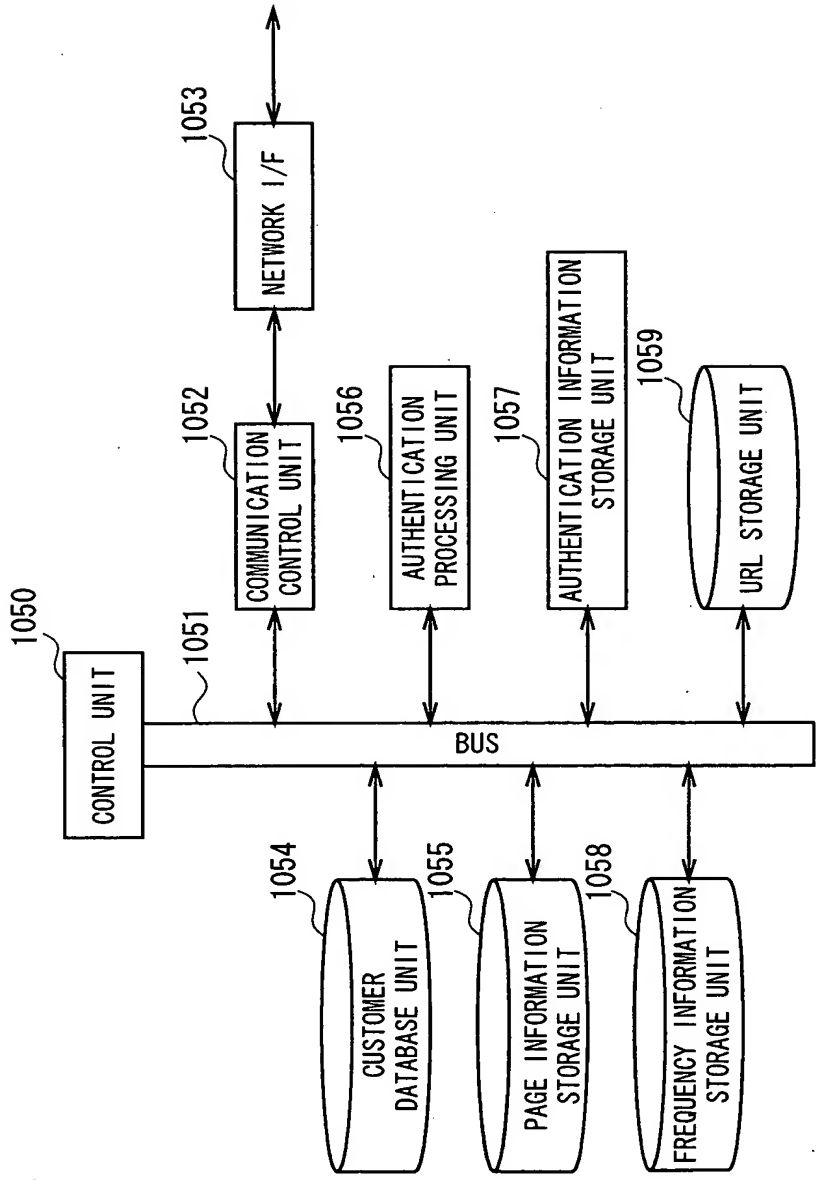
1003
1050
CONTROL UNIT
1051
BUS
1052
COMMUNICATION CONTROL UNIT
1053
NETWORK I/F
1054
CUSTOMER DATABASE UNIT
1055
PAGE INFORMATION STORAGE UNIT
1056
AUTHENTICATION PROCESSING UNIT
1057
AUTHENTICATION INFORMATION STORAGE UNIT
1058
FREQUENCY INFORMATION STORAGE UNIT
1059
URL STORAGE UNIT

FIG. 16

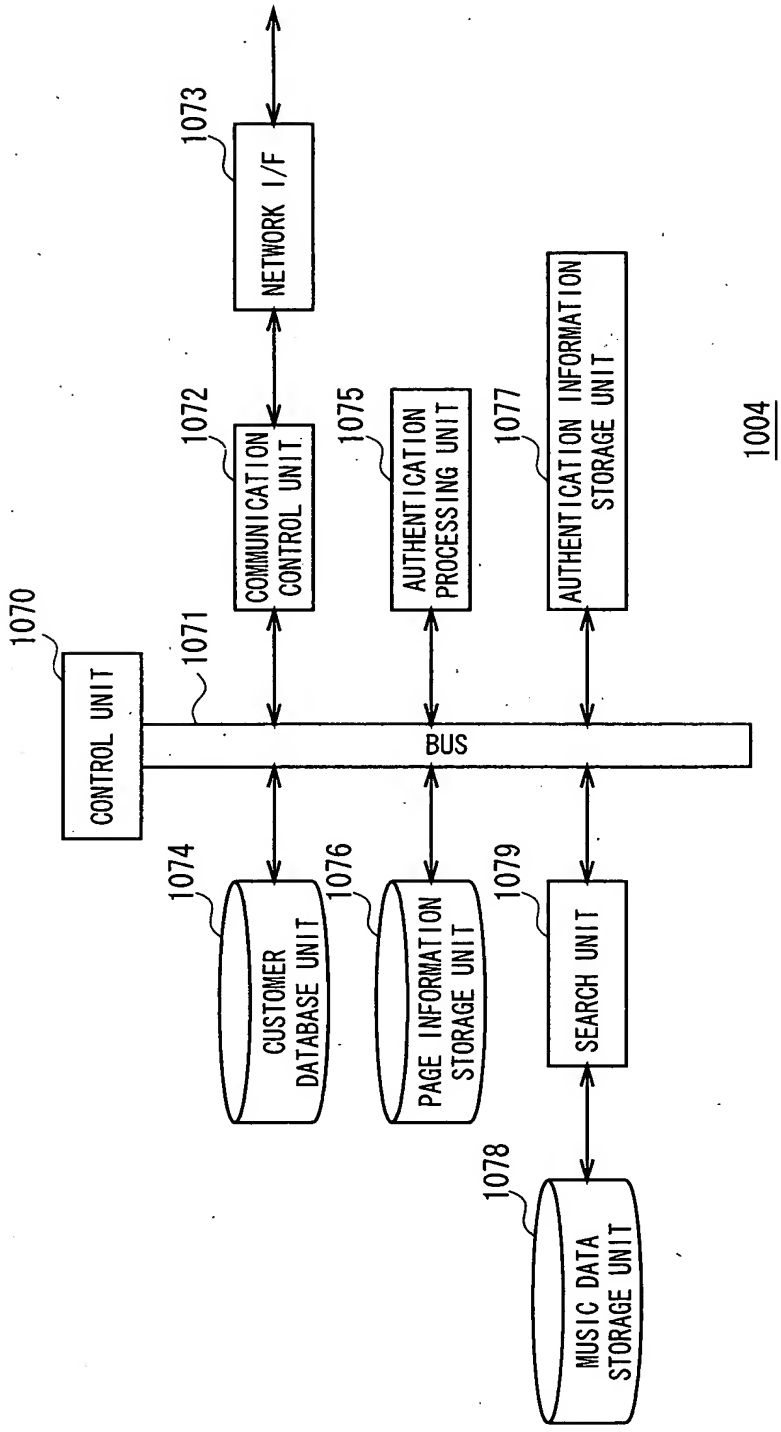
1004
1070
CONTROL UNIT
1071
BUS
1072
COMMUNICATION CONTROL UNIT
1073
NETWORK I/F
1074
CUSTOMER DATABASE UNIT
1075
AUTHENTICATION PROCESSING UNIT
1076
PAGE INFORMATION STORAGE UNIT
1077
AUTHENTICATION INFORMATION STORAGE UNIT
1078
MUSIC DATA STORAGE UNIT
1079
SEARCH UNIT

FIG. 17

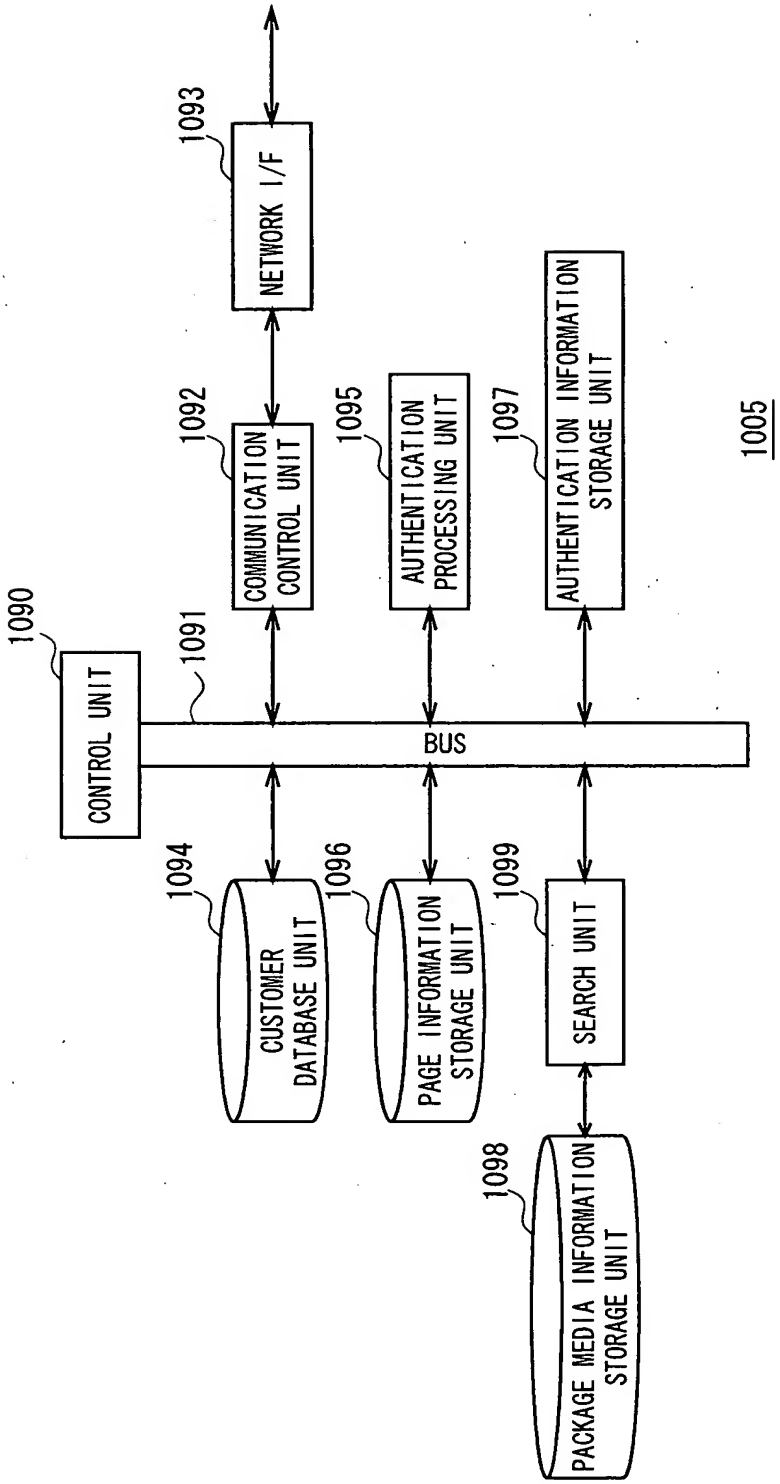
1005
1090
CONTROL UNIT
1091
BUS
1092
COMMUNICATION CONTROL UNIT
1093
NETWORK I/F
1094
CUSTOMER DATABASE UNIT
1095
AUTHENTICATION PROCESSING UNIT
1096
PAGE INFORMATION STORAGE UNIT
1097
AUTHENTICATION INFORMATION STORAGE UNIT
1098
PACKAGE MEDIA INFORMATION STORAGE UNIT
1099
SEARCH UNIT

FIG. 18

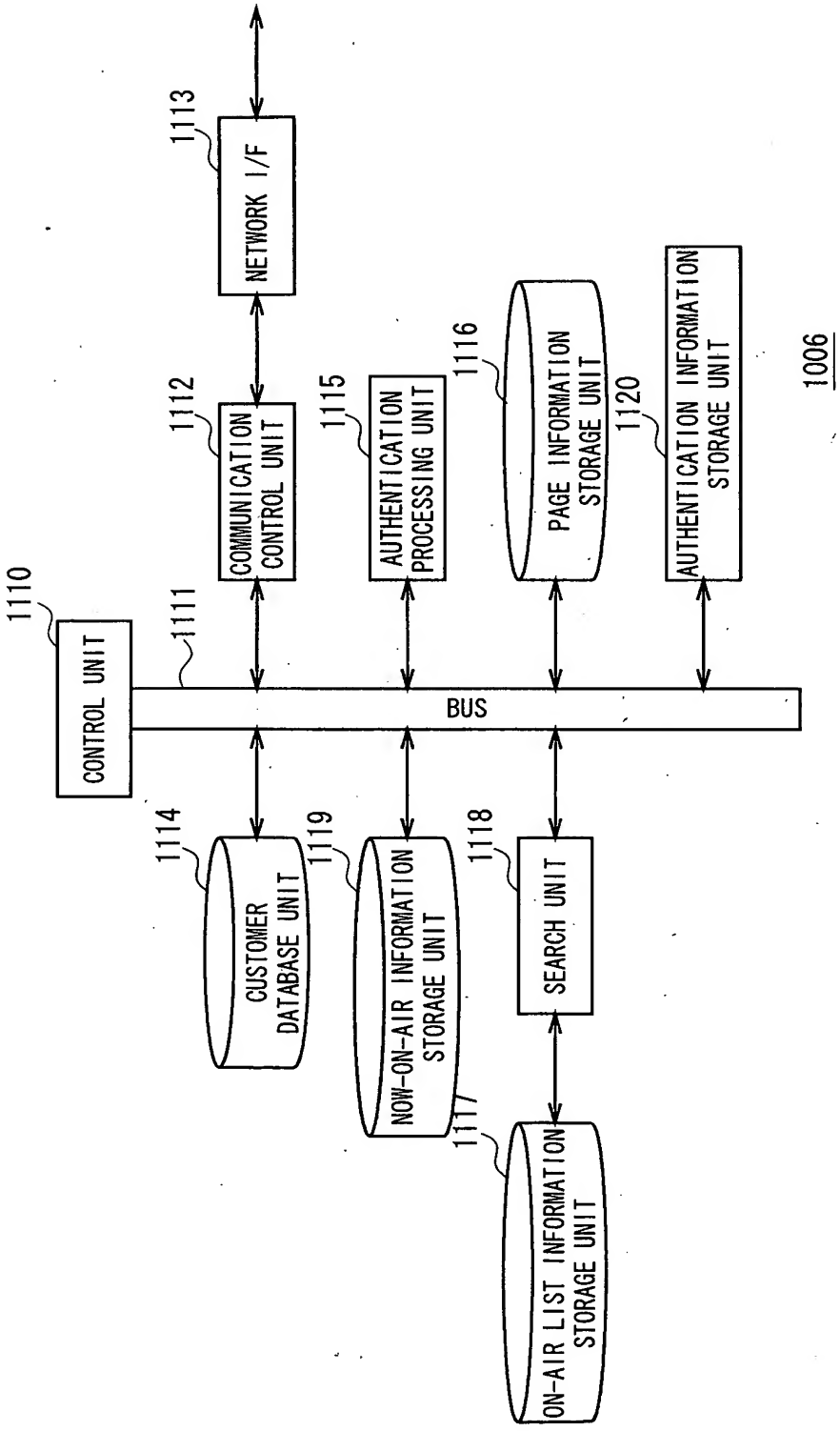
1006
1110
CONTROL UNIT
1111
BUS
1112
COMMUNICATION CONTROL UNIT
1113
NETWORK I/F
1114
CUSTOMER DATABASE UNIT
1115
AUTHENTICATION PROCESSING UNIT
1116
PAGE INFORMATION STORAGE UNIT
1117
ON-AIR LIST INFORMATION STORAGE UNIT
1118
SEARCH UNIT
1119
NOW-ON-AIR INFORMATION STORAGE UNIT
1120
AUTHENTICATION INFORMATION STORAGE UNIT

FIG. 19

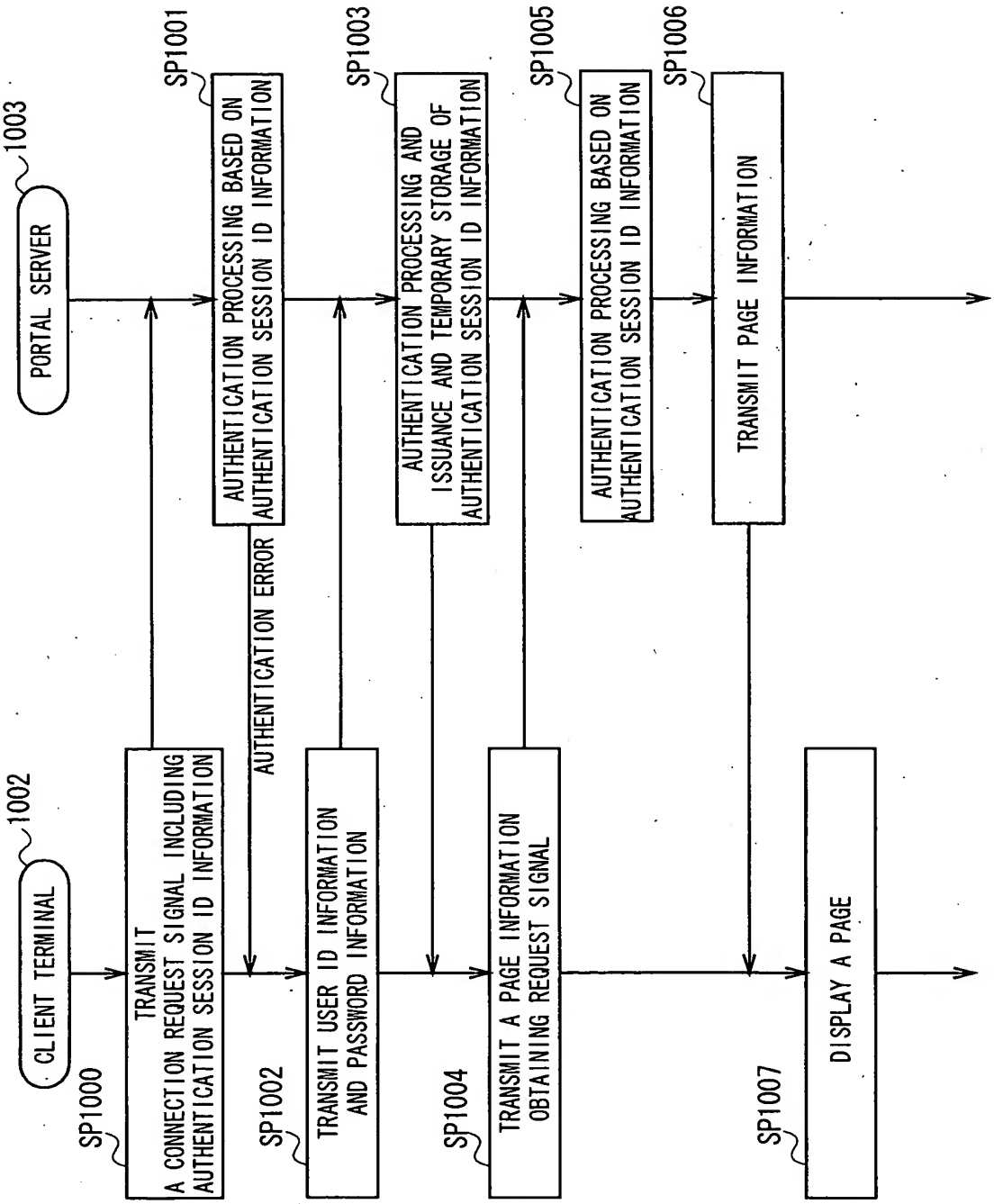
CLIENT TERMINAL
1002
PORTAL SERVER
1003
SP1000
TRANSMIT A CONNECTION REQUEST SIGNAL INCLUDING AUTHENTICATION SESSION ID INFORMATION
SP1001
AUTHENTICATION PROCESSING BASED ON AUTHENTICATION SESSION ID INFORMATION
AUTHENTICATION ERROR
SP1002
TRANSMIT USER ID INFORMATION AND PASSWORD INFORMATION
SP1003
AUTHENTICATION PROCESSING AND ISSUANCE AND TEMPORARY STORAGE OF AUTHENTICATION SESSION ID INFORMATION
SP1004
TRANSMIT A PAGE INFORMATION OBTAINING REQUEST SIGNAL
SP1005
AUTHENTICATION PROCESSING BASED ON AUTHENTICATION SESSION ID INFORMATION
SP1006
TRANSMIT PAGE INFORMATION
SP1007
DISPLAY A PAGE

FIG. 20

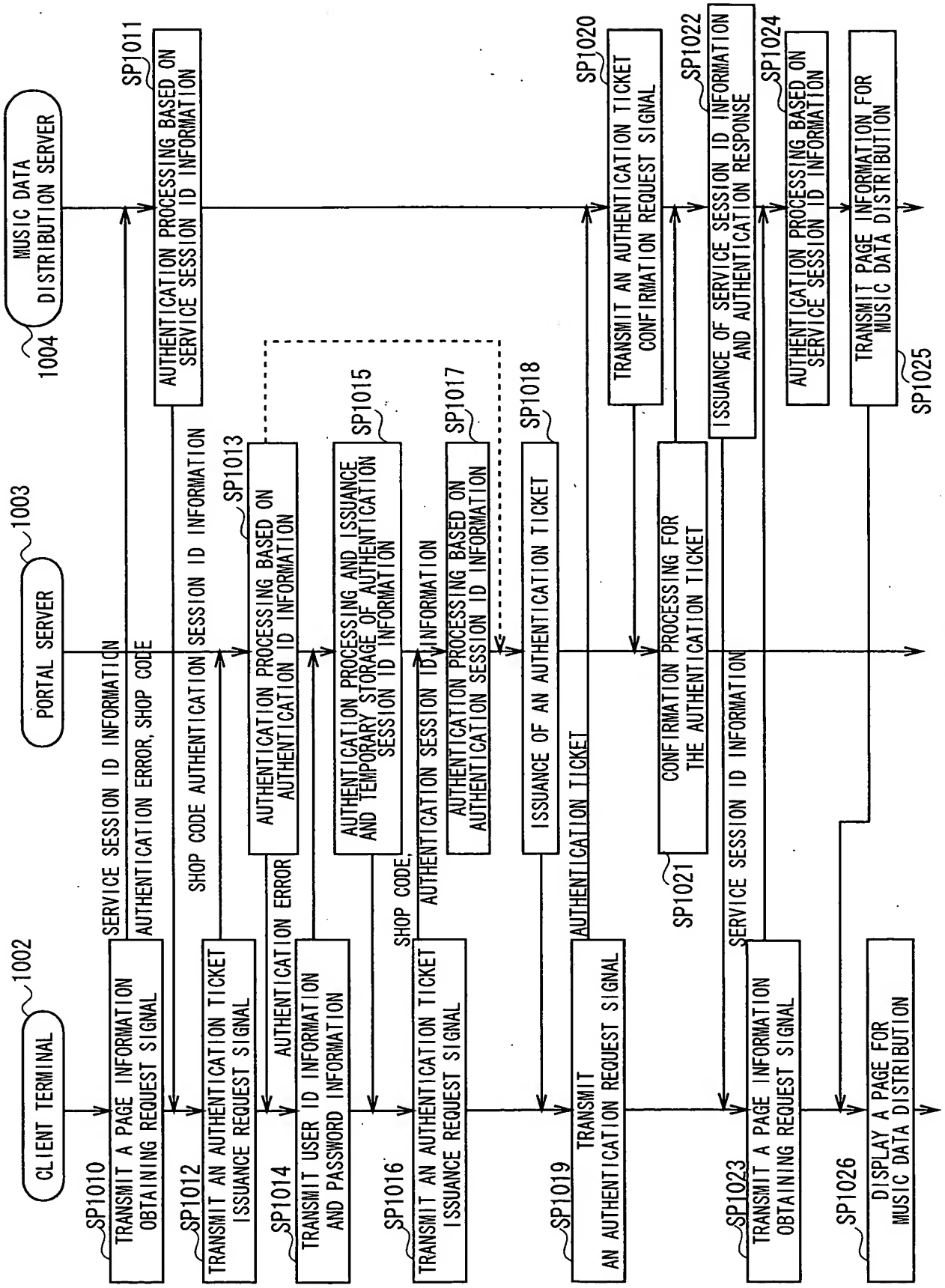
CLIENT TERMINAL
1002
PORTAL SERVER
1003
MUSIC DATA DISTRIBUTION SERVER
1004
SP1010
TRANSMIT A PAGE INFORMATION OBTAINING REQUEST SIGNAL
SERVICE SESSION ID INFORMATION
AUTHENTICATION ERROR, SHOP CODE
SP1011
AUTHENTICATION PROCESSING BASED ON SERVICE SESSION ID INFORMATION
SP1012
TRANSMIT AN AUTHENTICATION TICKET ISSUANCE REQUEST SIGNAL
SHOP CODE AUTHENTICATION SESSION ID INFORMATION
SP1013
AUTHENTICATION PROCESSING BASED ON AUTHENTICATION ID INFORMATION
SP1014
TRANSMIT USER ID INFORMATION AND PASSWORD INFORMATION
AUTHENTICATION ERROR
SP1015
AUTHENTICATION PROCESSING AND ISSUANCE AND TEMPORARY STORAGE OF AUTHENTICATION SESSION ID INFORMATION
SP1016
TRANSMIT AN AUTHENTICATION TICKET ISSUANCE REQUEST SIGNAL
SHOP CODE, AUTHENTICATION SESSION ID INFORMATION
SP1017
AUTHENTICATION PROCESSING BASED ON AUTHENTICATION SESSION ID INFORMATION
SP1018
ISSUANCE OF AN AUTHENTICATION TICKET
SP1019
TRANSMIT AN AUTHENTICATION REQUEST SIGNAL
AUTHENTICATION TICKET
SP1020
TRANSMIT AN AUTHENTICATION TICKET CONFIRMATION REQUEST SIGNAL
SP1021
CONFIRMATION PROCESSING FOR THE AUTHENTICATION TICKET
SP1022
ISSUANCE OF SERVICE SESSION ID INFORMATION AND AUTHENTICATION RESPONSE
SERVICE SESSION ID INFORMATION
SP1023
TRANSMIT A PAGE INFORMATION OBTAINING REQUEST SIGNAL
SP1024
AUTHENTICATION PROCESSING BASED ON SERVICE SESSION ID INFORMATION
SP1025
TRANSMIT PAGE INFORMATION FOR MUSIC DATA DISTRIBUTION
SP1026
DISPLAY A PAGE FOR MUSIC DATA DISTRIBUTION

FIG. 21

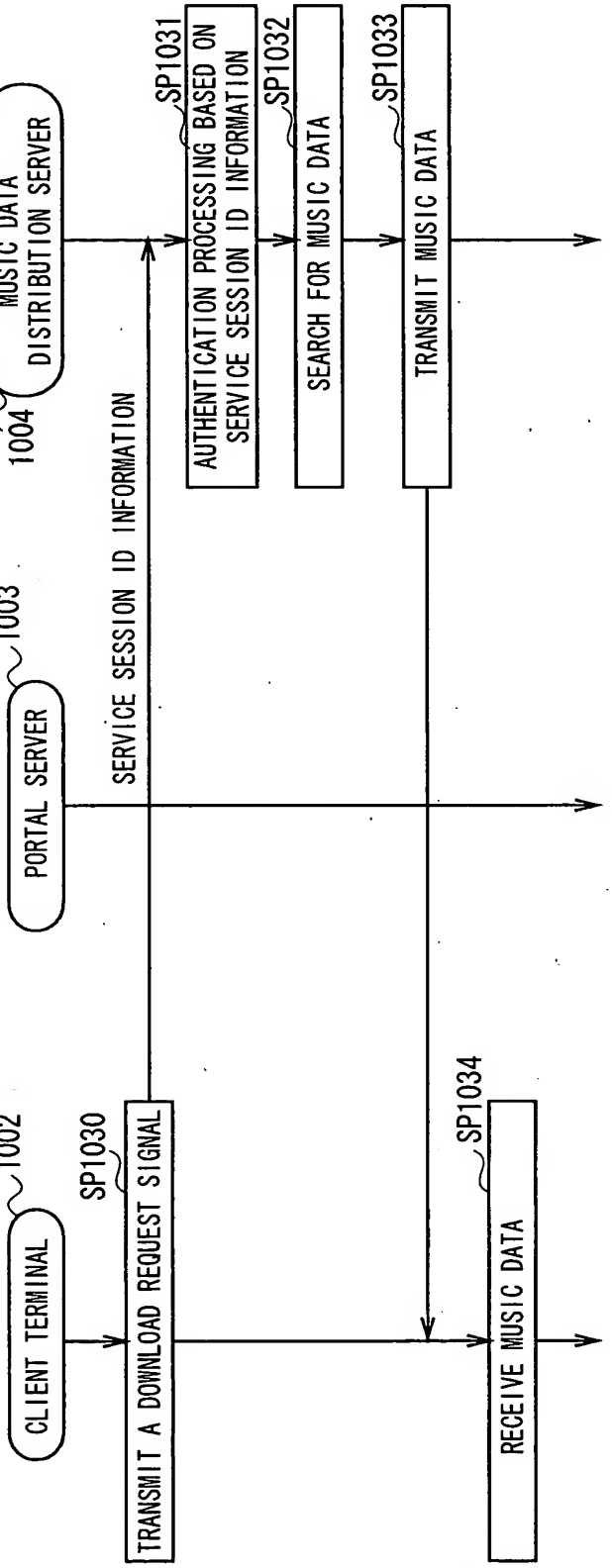
CLIENT TERMINAL
1002
PORTAL SERVER
1003
MUSIC DATA DISTRIBUTION SERVER
1004
SP1030
TRANSMIT A DOWNLOAD REQUEST SIGNAL
SERVICE SESSION ID INFORMATION
SP1031
AUTHENTICATION PROCESSING BASED ON SERVICE SESSION ID INFORMATION
SP1032
SEARCH FOR MUSIC DATA
SP1033
TRANSMIT MUSIC DATA
SP1034
RECEIVE MUSIC DATA

FIG. 22

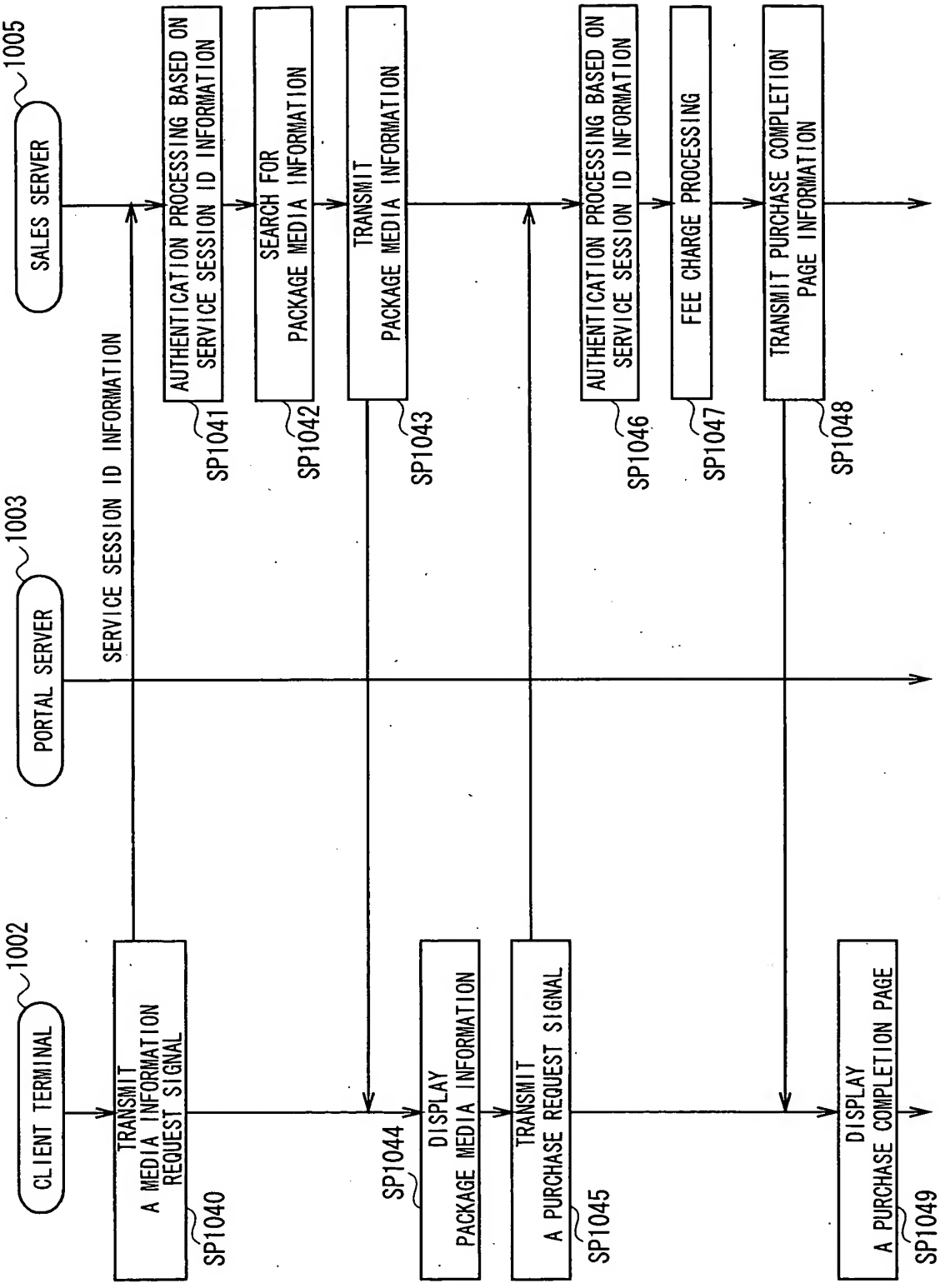
CLIENT TERMINAL
1002
PORTAL SERVER
1003
SALES SERVER
1005
TRANSMIT A MEDIA INFORMATION REQUEST SIGNAL
SP1040
SERVICE SESSION ID INFORMATION
AUTHENTICATION PROCESSING BASED ON SERVICE SESSION ID INFORMATION
SP1041
SEARCH FOR PACKAGE MEDIA INFORMATION
SP1042
TRANSMIT PACKAGE MEDIA INFORMATION
SP1043
DISPLAY PACKAGE MEDIA INFORMATION
SP1044
TRANSMIT A PURCHASE REQUEST SIGNAL
SP1045
AUTHENTICATION PROCESSING BASED ON SERVICE SESSION ID INFORMATION
SP1046
FEE CHARGE PROCESSING
SP1047
TRANSMIT PURCHASE COMPLETION PAGE INFORMATION
SP1048
DISPLAY A PURCHASE COMPLETION PAGE
SP1049

FIG. 23

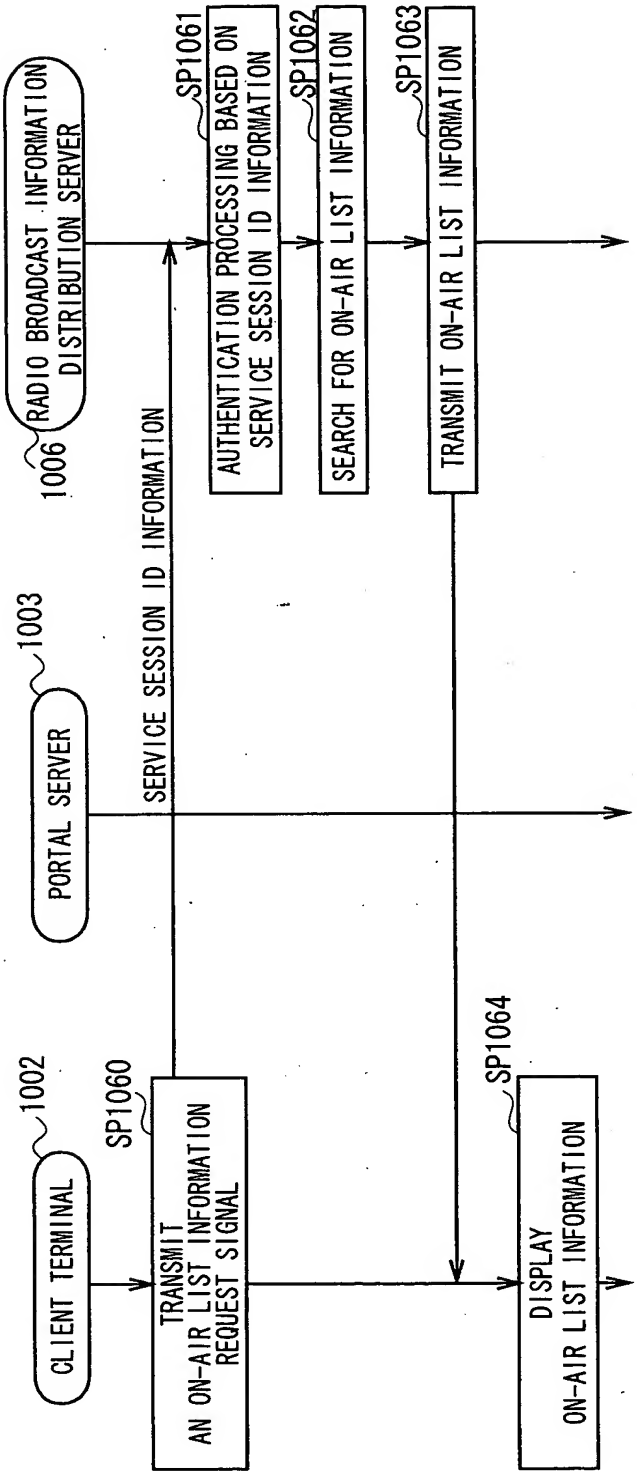
CLIENT TERMINAL
1002
PORTAL SERVER
1003
RADIO BROADCAST INFORMATION DISTRIBUTION SERVER
1006
SERVICE SESSION ID INFORMATION
SP1060
TRANSMIT AN ON-AIR LIST INFORMATION REQUEST SIGNAL
SP1061
AUTHENTICATION PROCESSING BASED ON SERVICE SESSION ID INFORMATION
SP1062
SEARCH FOR ON-AIR LIST INFORMATION
SP1063
TRANSMIT ON-AIR LIST INFORMATION
SP1064
DISPLAY ON-AIR LIST INFORMATION

FIG. 24

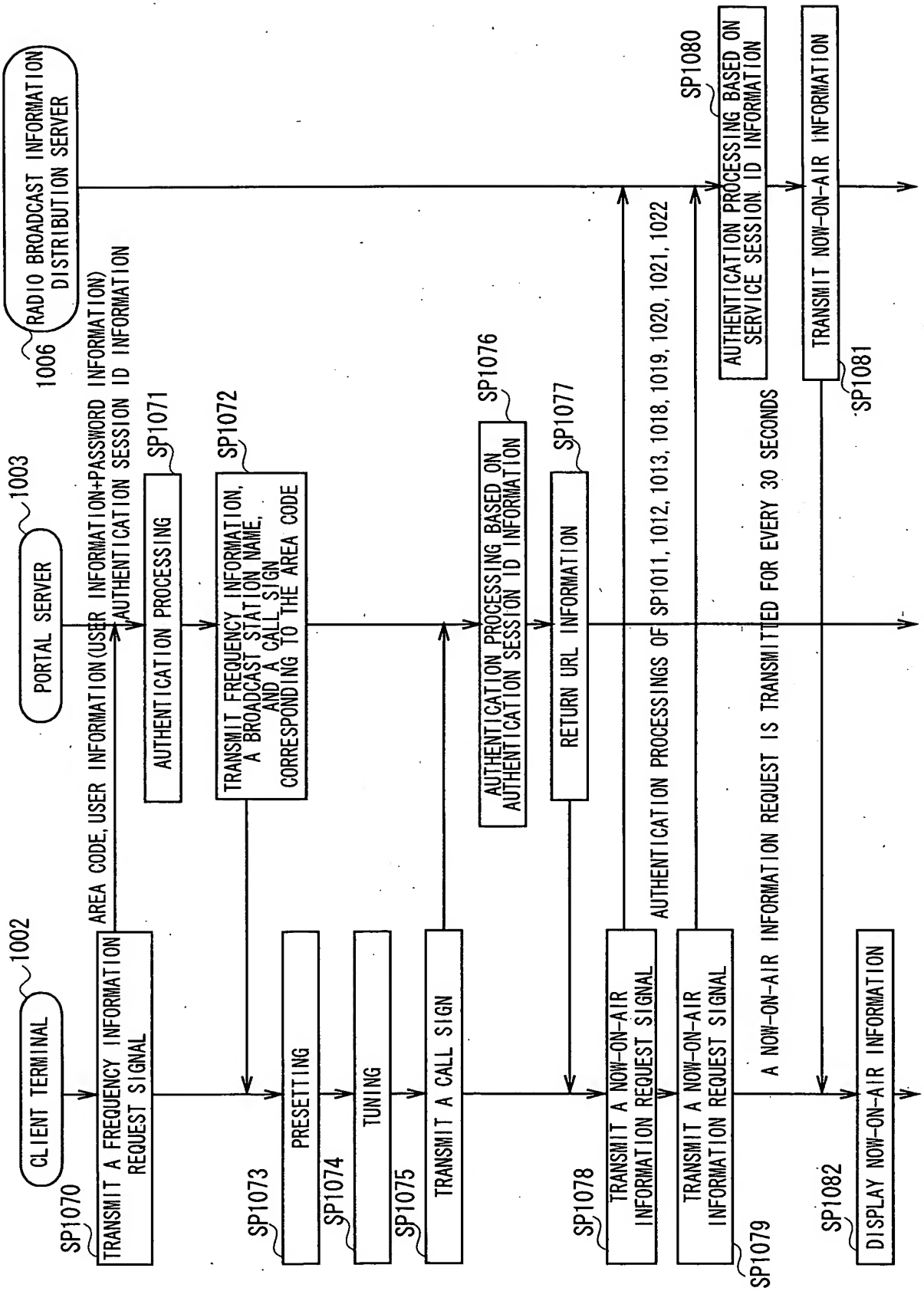
CLIENT TERMINAL
1002
PORTAL SERVER
1003
RADIO BROADCAST INFORMATION DISTRIBUTION SERVER
1006
SP1070
TRANSMIT A FREQUENCY INFORMATION REQUEST SIGNAL
AREA CODE, USER INFORMATION (USER INFORMATION+PASSWORD INFORMATION)
AUTHENTICATION SESSION ID INFORMATION
SP1071
AUTHENTICATION PROCESSING
SP1072
TRANSMIT FREQUENCY INFORMATION, A BROADCAST STATION NAME, AND A CALL SIGN CORRESPONDING TO THE AREA CODE
SP1073
PRESETTING
SP1074
TUNING
SP1075
TRANSMIT A CALL SIGN
SP1076
AUTHENTICATION PROCESSING BASED ON AUTHENTICATION SESSION ID INFORMATION
SP1077
RETURN URL INFORMATION
SP1078
TRANSMIT A NOW-ON-AIR INFORMATION REQUEST SIGNAL
AUTHENTICATION PROCESSINGS OF SP1011, 1012, 1013, 1018, 1019, 1020, 1021, 1022
SP1079
TRANSMIT A NOW-ON-AIR INFORMATION REQUEST SIGNAL
A NOW-ON-AIR INFORMATION REQUEST IS TRANSMITTED FOR EVERY 30 SECONDS
SP1080
AUTHENTICATION PROCESSING BASED ON SERVICE SESSION ID INFORMATION
SP1081
TRANSMIT NOW-ON-AIR INFORMATION
SP1082
DISPLAY NOW-ON-AIR INFORMATION

FIG. 25

EXPLANATION OF REFERENCE NUMERALS

1...REPRODUCING APPARATUS, 1A...BROADCAST SIGNAL RECEPTION MEANS, 1B...BROADCAST SIGNAL REPRODUCING MEANS, 1C...SETTING INFORMATION TRANSMISSION MEANS, 1D...LIST INFORMATION RECEPTION MEANS, 1E...DISPLAY MEANS, 1F...RECORDING MEANS, 2...BROADCAST STATION SPECIFY SERVER, 3...NETWORK, 4...PROGRAM INFORMATION SERVER, 1000...MUSIC-RELATED SERVICE PROVIDING SYSTEM, 1002...CLIENT TERMINAL, 1003...PORTAL SERVER, 1004...MUSIC DATA DISTRIBUTION SERVER, 1005...SALES SERVER, 1006...RADIO BROADCAST INFORMATION DISTRIBUTION SERVER, 1007...INTERNET RADIO SERVER, 1008...ACCOUNTING SERVER